

MISCELLANEOUS REPORT NO. 18

COMMODITY DRAIN FROM FORESTS OF THE LAKE STATES

1950

By Arthur G. Horn, Forest Economist

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Lake States Forest Experiment Station

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INTRODUCTION

Industries and public agencies frequently request data on forest products manufacture and timber drain. To meet these demands effectively and to provide estimates for forest surveys, the Station periodically prepares summaries such as presented here for 1950. Similar reports have been prepared each year since 1946.^{3/}

In using the data given in this report, one should keep in mind the standards and definitions used in compiling the information (see definitions).

BASIS FOR PRODUCTION STATISTICS

By means of a sample survey of representative sawmills, the Bureau of the Census collected and published regional lumber production statistics for 1950. For lack of state-wide figures, the Station applied production ratios to the regional figures to obtain a breakdown of the estimated quantity of lumber produced in Minnesota, Wisconsin, and Michigan. The Bureau of the Census state-wide lumber production statistics for 1947 with some adjustments for closure of several large mills during the interim were used to determine production ratios.

Origin by state and county of logs consumed by large mills in 1950 was also collected by the Bureau of the Census. The Station, in turn, obtained similar information from most of the medium-sized mills. From these data interstate log shipments for 1950 were determined.

State-wide lumber production estimates and interstate log shipments for 1950 were used as a basis for determining state-wide sawlog and saw-bolt production estimates.

^{1/} The author gratefully acknowledges the help from many owners and operators of primary wood-using establishments in the region who so kindly cooperated and furnished the basic information so necessary for this report.

^{2/} Maintained by the U. S. Department of Agriculture, Forest Service, in cooperation with the University of Minnesota, University Farm, St. Paul 1, Minnesota.

^{3/} Miscellaneous Report No. 7 (1946), Miscellaneous Report No. 9 (1947), Station Paper No. 20 (1948), and Miscellaneous Report No. 19 (1949).

For veneer, pulp distillation, excelsior, and cooperage industries, a complete canvass was made of all known plants early in 1951. The volume of logs and bolts received at these plants during the calendar year was used as a basis for production estimates.

For such minor items as piling, poles, hewn ties, round and split mine material, etc., production statistics were obtained by using results of a comprehensive survey made in 1947 and comparing with reliable production indexes for 1947-50; i.e., annual underground ore production by states, pole and piling receipts of several large distributors who handle most of the regional output. Because financial limitations precluded making special surveys, estimates for fuel wood, posts, and miscellaneous items were based largely on surveys made during the latter part of World War II. Some adjustments were made on the basis of more recent findings from wholesalers and distributors.

CONVERSION FACTORS

The Station has collected supplemental information on each product as to (1) percent of wood volume obtained from live, dead, and cull trees, and from by-product materials, and (2) proportion of volume cut from saw-timber and pole-timber trees. Gross volumes of individual products were determined from information furnished by industry. For example, stock records for posts, poles, and piling showed the number of pieces by length, top, and butt diameters. Such information made possible calculations of gross volume for each product. By incorporating these findings with data collected during a previous field survey (1936-37), a set of conversion and waste factors were prepared which are closely in line with present utilization standards of wood-using industries.

GENERAL LIMITATIONS OF DATA

The Forest Survey accuracy goal for timber drain estimates is ± 5 percent per billion cubic feet, which would permit a standard error of slightly more than 6 percent on the 1950 estimate for the Lake States. Because of the absence of an accurate survey for fuel wood for that year, the estimates presented here may not be within that limit. We feel, however, that the estimates are the best obtainable at this time and will serve a useful purpose. Figures for most products are within the proposed limits.

SURVEY DEFINITIONS

Commodity Production

The gross volume of a forest product made from any class of material from commercial or noncommercial forest lands. Production has been expressed in the following standard survey units: board-foot log scale, International 1/4-inch rule; cord (4x4x8 feet), rough-wood basis; number of pieces; and number of cubic feet (inside bark).

Cutting Drain

The net volume of timber removed from growing stock on commercial forest lands through commodity production and logging waste during the year, expressed in board feet, International 1/4-inch rule, and cubic feet (i.b.).

Drain from saw-timber trees.--The net volume (board feet, International 1/4-inch) of the log portion in softwood trees 9 inches and larger and hardwood trees 11 inches and larger, d.b.h., removed during logging operations. The cubic-foot volume shown includes both the saw-timber equivalent plus the volume in the tops of softwood trees to a 4-inch minimum.

This report differs slightly from those of 1946-1948 in that tops of hardwood saw-timber trees have not been included as drain for lack of sufficient data. Such material will be included in the future only when adequate data are available to make the calculations.

Drain from pole-timber trees.--The net volume in cubic feet (i.b.) of pole timber removed through cutting during the year. Included in this class are softwood trees from 5.0 to 8.9 inches and hardwood trees from 5.0 to 10.9 inches d.b.h. It includes cubic-foot volume found in the tree stems to a minimum top diameter of 4 inches (i.b.).

CUTTING DRAIN ON PRIMARY GROWING STOCK

1950

Table I. --Net timber drain resulting from cutting sawlogs and saw bolts in the Lake States - 1950

Net timber drain by size classes				Net timber drain by size classes			
Species and state	Total			Species and state	Total		
	M bd.ft.	M cu.ft.	M cu.ft.		M bd.ft.	M cu.ft.	M cu.ft.
White pine	62,410	14,400	1,670	Birch	49,640	10,060	2,360
Minnesota	12,980	3,000	350	Minnesota	2,100	430	100
Wisconsin	30,590	7,060	820	Wisconsin	9,730	1,970	460
Michigan	18,840	4,340	500	Michigan	37,810	7,660	1,800
Red pine	55,030	13,570	2,340	Basswood	34,560	6,990	1,640
Minnesota	23,700	5,850	1,010	Minnesota	7,960	1,610	380
Wisconsin	23,290	5,740	990	Wisconsin	14,150	2,860	670
Michigan	8,040	1,980	340	Michigan	12,450	2,520	590
Jack pine	48,760	16,270	6,320	Elm	48,510	9,830	2,310
Minnesota	34,990	11,680	4,540	Minnesota	10,310	2,090	490
Wisconsin	5,430	1,810	700	Wisconsin	17,550	3,560	840
Michigan	8,340	2,780	1,080	Michigan	20,650	4,180	980
Spruce	9,800	3,000	1,000	Beech	15,790	3,200	750
Minnesota	4,020	1,230	410	Minnesota	--	--	--
Wisconsin	1,100	340	110	Wisconsin	640	130	30
Michigan	4,680	1,430	480	Michigan	15,150	3,070	720
Balsam	5,590	1,710	580	Oak	80,810	16,370	3,850
Minnesota	3,070	940	320	Minnesota	9,400	1,900	450
Wisconsin	700	210	70	Wisconsin	49,120	9,950	2,340
Michigan	1,820	560	190	Michigan	22,290	4,520	1,060
Tamarack	3,010	920	310	Aspen	58,730	35,480	26,170
Minnesota	1,780	550	180	Minnesota	20,870	12,610	9,300
Wisconsin	970	290	100	Wisconsin	24,750	14,950	11,030
Michigan	260	80	30	Michigan	13,110	7,920	5,840
Cedar	7,180	2,210	740	Cottonwood	9,190	1,870	440
Minnesota	810	250	80	Minnesota	5,530	1,120	260
Wisconsin	1,630	500	170	Wisconsin	1,580	330	80
Michigan	4,740	1,460	490	Michigan	2,080	420	100
Hemlock	181,840	39,390	2,310	Miscellaneous	18,960	3,840	900
Minnesota	--	--	--	Minnesota	3,050	620	150
Wisconsin	58,320	12,630	740	Wisconsin	7,650	1,550	360
Michigan	123,520	26,760	1,570	Michigan	8,250	1,670	390
Softwood total	373,620	91,470	15,270	Hardwood total	479,750	120,780	46,220
Minnesota	81,350	23,500	6,890	Minnesota	61,040	20,750	11,220
Wisconsin	122,030	28,580	3,700	Wisconsin	167,460	43,870	17,830
Michigan	170,240	39,390	4,680	Michigan	251,250	56,160	17,170
Maple	163,560	33,140	7,800	All Species	853,370	212,250	61,490
Minnesota	1,820	370	90	Minnesota	142,390	44,250	18,110
Wisconsin	42,290	8,570	2,020	Wisconsin	289,490	72,450	21,530
Michigan	119,450	24,200	5,690	Michigan	421,490	95,550	21,850

Table 2.--Net timber drain resulting from cutting veneer logs and bolts in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.		M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.
White pine	460	80	70	10	Birch	18,530	2,880	2,870	10
Minnesota	30	5	5	--	Minnesota	4,160	650	640	10
Wisconsin	400	70	60	10	Wisconsin	14,230	2,210	2,210	--
Michigan	30	5	5	--	Michigan	12,240	2,130	1,890	240
Red pine	--	--	--	--	Minnesota	3,500	560	540	20
Minnesota	--	--	--	--	Wisconsin	4,930	930	760	170
Wisconsin	--	--	--	--	Michigan	3,810	640	590	50
Michigan	--	--	--	--	Elm	12,930	2,120	2,000	120
Jack pine	--	--	--	--	Minnesota	1,450	220	220	--
Minnesota	--	--	--	--	Wisconsin	6,700	1,130	1,040	90
Wisconsin	--	--	--	--	Michigan	4,780	770	740	30
Michigan	--	--	--	--	Beech	6,520	1,010	1,010	--
Spruce	--	--	--	--	Minnesota	--	--	--	--
Minnesota	--	--	--	--	Wisconsin	200	30	30	--
Wisconsin	--	--	--	--	Michigan	6,320	980	980	--
Michigan	--	--	--	--	Oak	3,790	590	590	--
Balsam	--	--	--	--	Minnesota	360	60	60	--
Minnesota	--	--	--	--	Wisconsin	2,500	390	390	--
Wisconsin	--	--	--	--	Michigan	930	140	140	--
Michigan	--	--	--	--	Aspen	540	680	90	590
Tamarack	--	--	--	--	Minnesota	230	100	40	60
Minnesota	--	--	--	--	Wisconsin	310	580	50	530
Wisconsin	--	--	--	--	Michigan	--	--	--	--
Michigan	--	--	--	--	Cottonwood	--	--	--	--
Cedar	--	--	--	--	Minnesota	--	--	--	--
Minnesota	--	--	--	--	Wisconsin	--	--	--	--
Wisconsin	--	--	--	--	Michigan	--	--	--	--
Michigan	--	--	--	--	Miscellaneous	2,725	440	430	10
Hemlock	1,770	340	290	50	Minnesota	480	80	80	--
Minnesota	--	--	--	--	Wisconsin	645	110	100	10
Wisconsin	--	--	--	--	Michigan	1,600	250	250	--
Michigan	1,770	340	290	50	Hardwood total	90,605	15,120	14,040	1,080
Softwood total	2,230	420	360	60	Minnesota	6,770	1,130	1,050	80
Minnesota	30	5	5	--	Wisconsin	28,735	5,350	4,460	890
Wisconsin	400	70	60	10	Michigan	55,050	8,640	8,530	110
Michigan	1,800	345	295	50	All species	92,835	15,540	14,400	1,080
Maple	33,330	5,270	5,160	--	Minnesota	6,800	1,135	1,055	80
Minnesota	610	90	90	--	Wisconsin	29,185	5,420	4,520	890
Wisconsin	9,340	1,530	1,450	--	Michigan	56,850	8,985	8,825	110
Michigan	23,380	3,650	3,620	--					

Table 3.--Net timber drain resulting from pulpwood cutting in the Lake States - 1950

[illegible]

Table 4.--Net timber drain resulting from fuel wood cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	:Saw tbr.: Pole tbr.:	Tops		M bd.ft.	M cu.ft.	:Saw tbr.: Pole tbr.:	Tops
White pine	1,650	1,360	370	900	Birch	7,570	5,810	1,760	4,050
Minnesota	2,210	1,170	50	110	Minnesota	2,210	1,690	510	1,180
Wisconsin	960	790	210	530	Wisconsin	2,840	2,180	660	1,520
Michigan	480	400	110	260	Michigan	2,520	1,940	590	1,350
Red pine	350	290	70	200	Basswood	3,470	2,650	800	1,850
Minnesota	140	120	30	80	Minnesota	1,890	1,450	440	1,010
Wisconsin	140	120	30	80	Wisconsin	790	600	180	420
Michigan	70	50	10	40	Michigan	790	600	180	420
Jack pine	1,590	1,290	340	870	Elm	10,080	7,770	2,360	5,410
Minnesota	690	570	150	380	Minnesota	3,150	2,430	740	1,690
Wisconsin	830	670	180	450	Wisconsin	2,360	1,820	550	1,270
Michigan	70	50	10	40	Michigan	4,570	3,520	1,070	2,450
Spruce	490	410	100	270	Beech	1,260	970	300	670
Minnesota	280	230	60	150	Minnesota	--	--	--	--
Wisconsin	70	60	10	40	Wisconsin	160	120	40	80
Michigan	140	120	30	80	Michigan	1,100	850	260	590
Balsam	480	410	110	270	Oak	27,090	20,850	6,320	14,530
Minnesota	340	290	80	190	Minnesota	5,510	4,250	1,290	2,960
Wisconsin	70	70	20	40	Wisconsin	13,070	10,060	3,050	7,010
Michigan	70	50	10	40	Michigan	8,510	6,540	1,980	4,560
Tamarack	2,820	2,320	620	1,540	Aspen	20,630	15,880	4,810	11,070
Minnesota	2,130	1,750	470	1,160	Minnesota	9,290	7,160	2,170	4,990
Wisconsin	550	450	120	300	Wisconsin	5,040	3,870	1,170	2,700
Michigan	140	120	30	80	Michigan	6,300	4,850	1,470	3,380
Cedar	550	460	120	310	Ash	1,890	1,450	440	1,010
Minnesota	140	120	30	80	Minnesota	470	360	110	250
Wisconsin	340	290	80	190	Wisconsin	790	600	180	420
Michigan	70	50	10	40	Michigan	630	490	150	340
Hemlock	2,950	2,420	640	1,620	Miscellaneous	4,890	3,760	1,140	2,620
Minnesota	--	--	--	--	Minnesota	2,840	2,180	660	1,520
Wisconsin	1,990	1,630	430	1,090	Wisconsin	1,100	850	260	590
Michigan	960	790	210	530	Michigan	950	730	220	510
Softwood total	10,880	8,960	2,370	5,980	Hardwood total	90,120	69,320	21,010	48,310
Minnesota	3,930	3,250	870	2,150	Minnesota	25,680	19,760	5,990	13,770
Wisconsin	4,950	4,080	1,080	2,720	Wisconsin	31,190	23,970	7,260	16,710
Michigan	2,000	1,630	420	1,110	Michigan	33,250	25,590	7,760	17,830
Maple	13,240	10,180	3,080	7,100	All species	101,000	78,280	23,380	54,290
Minnesota	320	240	70	170	Minnesota	29,610	23,010	6,860	15,920
Wisconsin	5,040	3,870	1,170	2,700	Wisconsin	36,140	28,050	8,340	19,430
Michigan	7,880	6,070	1,840	4,230	Michigan	35,250	27,220	8,180	18,940

Table 5.--Net timber drain resulting from cutting piling in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	Total		Pole tbr.: M cu.ft.			Total		Pole tbr.: M cu.ft.	
	M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.		M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.
White pine Minnesota Wisconsin Michigan	--	--	--	--	Birch Minnesota Wisconsin Michigan	--	--	--	--
Red pine Minnesota Wisconsin Michigan	310 170 30 110	55 25 5 25	45 20 5 20	10 5 -- 5	Basswood Minnesota Wisconsin Michigan	--	--	--	--
Jack pine Minnesota Wisconsin Michigan	140 140 -- --	25 25 -- --	20 20 -- --	5 5 -- --	Elm Minnesota Wisconsin Michigan	380 -- 380 --	55 -- 55 --	55 -- 55 --	--
Spruce Minnesota Wisconsin Michigan	--	--	--	--	Beech Minnesota Wisconsin Michigan	--	--	--	--
Balsam Minnesota Wisconsin Michigan	--	--	--	--	Oak Minnesota Wisconsin Michigan	140 -- 140 --	20 -- 20 --	20 -- 20 --	--
Tamarack Minnesota Wisconsin Michigan	--	--	--	--	Aspen Minnesota Wisconsin Michigan	--	--	--	--
Cedar Minnesota Wisconsin Michigan	--	--	--	--	Ash Minnesota Wisconsin Michigan	15 -- 15 --	--	--	--
Hemlock Minnesota Wisconsin Michigan	--	--	--	--	Miscellaneous Minnesota Wisconsin Michigan	15 -- 15 --	--	--	--
Softwood total	450	80	65	15	Hardwood total	580	80	80	--
Minnesota	310	50	40	10	Minnesota	--	--	--	--
Wisconsin	30	5	5	--	Wisconsin	580	80	80	--
Michigan	110	25	20	5	Michigan	--	--	--	--
Maple Minnesota Wisconsin Michigan	30 -- 30 --	5 -- 5 --	5 -- 5 --	--	All species	1,030	160	145	15
					Minnesota	310	50	40	10
					Wisconsin	610	85	85	--
					Michigan	110	25	20	5

Table 6.--Net timber drain resulting from chemical wood cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	Saw tbr.: Pole tbr.: Tops	Total		M bd.ft.	M cu.ft.	Saw tbr.: Pole tbr.: Tops	Total
White pine	--	--	--	--	Birch	3,380	940	790	150
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	140	40	30	10
Michigan	--	--	--	--	Michigan	3,240	900	760	140
Red pine	--	--	--	--	Basswood	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Jack pine	--	--	--	--	Elm	140	40	30	10
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	140	40	30	10
Spruce	--	--	--	--	Beech	1,080	300	250	50
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	1,080	300	250	50
Balsam	--	--	--	--	Oak	140	40	30	10
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	140	40	30	10
Tamarack	--	--	--	--	Aspen	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Cedar	--	--	--	--	Ash	270	70	60	10
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	270	70	60	10
Hemlock	--	--	--	--	Miscellaneous	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Softwood total	--	--	--	--	Hardwood total	11,360	3,150	2,640	510
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	410	110	90	20
Michigan	--	--	--	--	Michigan	10,950	3,040	2,550	490
Maple	6,350	1,760	1,480	280	All species	11,360	3,150	2,640	510
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	270	70	60	10	Wisconsin	410	110	90	20
Michigan	6,080	1,690	1,420	270	Michigan	10,950	3,040	2,550	490

Table 7.--Net timber drain resulting from cutting excelsior bolts in the Lake States - 1950

Species and state		Net timber drain by size classes			Net timber drain by size classes		
		Total		Total		Total	
		M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.	Tops	
		M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M cu.ft.
White pine	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Red pine	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Jack pine	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Spruce	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Balsam	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Tamarack	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Cedar	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Hemlock	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Softwood total		--	--	--	--	--	--
Minnesota	Wisconsin	--	--	--	--	--	--
Michigan		--	--	--	--	--	--
Maple	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Birch	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Hardwood	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Hardwood total		--	--	--	--	--	--
Minnesota	Wisconsin	--	--	--	--	--	--
Michigan		--	--	--	--	--	--
All species	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Aspen	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Cottonwood	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Miscellaneous	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--
Hardwood total		--	--	--	--	--	--
Minnesota	Wisconsin	--	--	--	--	--	--
Michigan		--	--	--	--	--	--
All species	Minnesota	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--

Table 8.--Net timber drain resulting from fence post cutting in the Lake States - 1950

Species and state				Net timber drain by size classes				Species and state				Net timber drain by size classes																							
:				:				:				:																							
Total				Saw tbr.: Pole tbr.: Tops				Total				Saw tbr.: Pole tbr.: Tops																							
M bd.ft. M cu.ft. M cu.ft. M cu.ft.				M bd.ft. M cu.ft. M cu.ft. M cu.ft.				M bd.ft. M cu.ft. M cu.ft. M cu.ft.				M bd.ft. M cu.ft. M cu.ft. M cu.ft.																							
White pine	Minnesota	Wisconsin	Michigan	450	360	90	--	400	310	90	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Red pine	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Jack pine	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Spruce	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Balsam	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Tamarack	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Cedar	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Hemlock	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Softwood total	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250
Maple	Minnesota	Wisconsin	Michigan	400	310	90	--	310	90	20	--	770	560	120	90	860	630	140	90	280	220	60	--	60	30	40	10	30	60	60	250	30	110	110	250

Table 9.--Net timber drain resulting from cutting utility poles in the Lake States - 1950

Species		Net timber drain by size classes						Net timber drain by size classes					
and state		Total		Saw tbr.: Pole tbr.: Tops				Total		Saw tbr.: Pole tbr.: Tops			
		M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M cu.ft.	M cu.ft.
White pine		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Red pine		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Jack pine		440	155	85	55	15	55	--	--	--	--	--	--
Minnesota		410	145	80	50	15	50	--	--	--	--	--	--
Wisconsin		30	10	5	5	--	5	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Spruce		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Balsam		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Tamarack		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Cedar		2,860	1,040	590	340	110	340	--	--	--	--	--	--
Minnesota		1,510	550	310	180	60	180	--	--	--	--	--	--
Wisconsin		250	90	50	30	10	30	--	--	--	--	--	--
Michigan		1,100	400	230	130	40	130	--	--	--	--	--	--
Hemlock		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
Softwood total		3,300	1,195	675	395	125	395	--	--	--	--	--	--
Minnesota		1,920	695	390	230	75	230	--	--	--	--	--	--
Wisconsin		280	100	55	35	10	35	--	--	--	--	--	--
Michigan		1,100	400	230	130	40	130	--	--	--	--	--	--
Maple		--	--	--	--	--	--	--	--	--	--	--	--
Minnesota		--	--	--	--	--	--	--	--	--	--	--	--
Wisconsin		--	--	--	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--	--	--	--
All species		3,300	1,195	675	395	125	395	3,300	1,195	675	395	125	395
Minnesota		1,920	695	390	230	75	230	1,920	695	390	230	75	230
Wisconsin		280	100	55	35	10	35	280	100	55	35	10	35
Michigan		1,100	400	230	130	40	130	1,100	400	230	130	40	130

Table 10.--Net timber drain resulting from hemlock cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	Total		:Saw tbr.:Pole tbr.: Tops			Total		:Saw tbr.:Pole tbr.: Taps	
	M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.		M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.
White pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Birch Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Red pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Basswood Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Jack pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Elm Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Spruce Minnesota Wisconsin Michigan	5 -- -- 5	-- -- -- --	-- -- -- --	-- -- -- --	Beech Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Balsam Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Oak Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Tamarack Minnesota Wisconsin Michigan	5 5 -- --	-- -- -- --	-- -- -- --	-- -- -- --	Aspen Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Cedar Minnesota Wisconsin Michigan	55 5 -- 50	20 -- -- 20	10 -- -- 10	10 -- -- 10	Cottonwood Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Hemlock Minnesota Wisconsin Michigan	10 -- -- 10	-- -- -- --	-- -- -- --	-- -- -- --	Miscellaneous Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Softwood total	75	20	10	10	Hardwood total	--	--	--	--
Minnesota	10	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	65	20	10	10	Michigan	--	--	--	--
Maple Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	All species Minnesota Wisconsin Michigan	75 10 -- 65	20 -- -- 20	10 -- -- 10	10 -- -- 10

Table 11.--Net timber drain resulting from mine timber cutting in the Lake States - 1950

Species and state		Net timber drain by size classes			Species and state			Net timber drain by size classes		
		: Total			: Total			: Total		
		: Saw tbr.: Pole tbr.: Tops			: Saw tbr.: Pole tbr.: Tops			: Saw tbr.: Pole tbr.: Tops		
		M bd.ft. M cu.ft. M cu.ft. M cu.ft.			M bd.ft. M cu.ft. M cu.ft. M cu.ft.			M bd.ft. M cu.ft. M cu.ft. M cu.ft.		
White pine	Minnesota	50	10	10	50	10	10	50	10	10
Minnesota	Wisconsin	50	10	10	50	10	10	50	10	10
Wisconsin	Michigan	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--
Red pine	Minnesota	220	70	40	220	70	40	220	70	40
Minnesota	Wisconsin	220	70	40	220	70	40	220	70	40
Wisconsin	Michigan	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--
Jack pine	Minnesota	3,270	980	530	3,270	980	530	3,270	980	530
Minnesota	Wisconsin	3,270	980	530	3,270	980	530	3,270	980	530
Wisconsin	Michigan	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--
Spruce	Minnesota	20	--	--	20	--	--	20	--	--
Minnesota	Wisconsin	--	--	--	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--
Balsam	Minnesota	--	--	--	--	--	--	--	--	--
Minnesota	Wisconsin	--	--	--	--	--	--	--	--	--
Wisconsin	Michigan	--	--	--	--	--	--	--	--	--
Michigan		--	--	--	--	--	--	--	--	--
Tamarack	Minnesota	6,220	1,830	990	6,220	1,830	990	6,220	1,830	990
Minnesota	Wisconsin	3,020	890	480	3,020	890	480	3,020	890	480
Wisconsin	Michigan	440	130	70	440	130	70	440	130	70
Michigan		2,760	810	440	2,760	810	440	2,760	810	440
Cedar	Minnesota	5,350	1,620	890	5,350	1,620	890	5,350	1,620	890
Minnesota	Wisconsin	930	290	160	930	290	160	930	290	160
Wisconsin	Michigan	270	90	50	270	90	50	270	90	50
Michigan		4,150	1,240	680	4,150	1,240	680	4,150	1,240	680
Hemlock	Minnesota	1,020	300	160	1,020	300	160	1,020	300	160
Minnesota	Wisconsin	--	--	--	--	--	--	--	--	--
Wisconsin	Michigan	30	--	--	30	--	--	30	--	--
Michigan		990	300	160	990	300	160	990	300	160
Softwood total		16,150	4,810	2,620	16,150	4,810	2,620	16,150	4,810	2,620
Minnesota		7,490	2,240	1,220	7,490	2,240	1,220	7,490	2,240	1,220
Wisconsin		740	220	120	740	220	120	740	220	120
Michigan		7,920	2,350	1,280	7,920	2,350	1,280	7,920	2,350	1,280
Maple	Minnesota	6,700	1,600	1,120	6,700	1,600	1,120	6,700	1,600	1,120
Minnesota	Wisconsin	110	30	20	110	30	20	110	30	20
Wisconsin	Michigan	340	80	60	340	80	60	340	80	60
Michigan		6,250	1,490	1,040	6,250	1,490	1,040	6,250	1,490	1,040

Table 12.--Net timber drain resulting from coeprage log cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	Total	Saw tbr.: M bd.ft.	Pole tbr.: M cu.ft.	Tops M cu.ft.		Total	Saw tbr.: M bd.ft.	Pole tbr.: M cu.ft.	Tops M cu.ft.
White pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Birch Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Red pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Basswood Minnesota Wisconsin Michigan	140 90 50 --	20 10 10 --	20 10 10 --	-- -- -- --
Jack pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Eln. Minnesota Wisconsin Michigan	230 230 -- --	40 40 -- --	40 40 -- --	-- -- -- --
Spruce Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Beech Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Balsam Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Oak Minnesota Wisconsin Michigan	1,720 410 1,310 --	260 60 200 --	260 60 200 --	-- -- -- --
Tamarack Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Aspen Minnesota Wisconsin Michigan	80 80 -- --	10 10 -- --	10 10 -- --	-- -- -- --
Cedar Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Cottonwood Minnesota Wisconsin Michigan	220 220 -- --	30 30 -- --	30 30 -- --	-- -- -- --
Hemlock Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Miscellaneous Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Softwood total Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Hardwood total Minnesota Wisconsin Michigan	2,690 1,330 1,360 --	410 200 210 --	410 200 210 --	-- -- -- --
Maple Minnesota Wisconsin Michigan	300 300 -- --	50 50 -- --	50 50 -- --	-- -- -- --	All species Minnesota Wisconsin Michigan	2,690 1,330 1,360 --	410 200 210 --	410 200 210 --	-- -- -- --

Table 13.--Net timber drain resulting from cutting miscellaneous rough forest products in the Lake States - 1950

Species and state		Net timber drain by size classes				Species and state		Net timber drain by size classes			
		Total		:Saw tbr.:Pole tbr.: Tops				Total		:Saw tbr.:Pole tbr.: Tops	
		M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.			M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.
White pine	Michigan	540	210	90	30	Birch	Michigan	970	230	160	70
Minnesota	Michigan	180	70	30	10	Minnesota	Michigan	780	190	130	60
Wisconsin	Michigan	180	70	30	10	Wisconsin	Michigan	140	30	20	10
Michigan	Michigan	180	70	30	10	Michigan	Michigan	50	10	10	--
Red pine	Michigan	320	100	50	--	Basewood	Michigan	660	180	120	60
Minnesota	Michigan	140	40	20	--	Minnesota	Michigan	300	80	50	30
Wisconsin	Michigan	70	20	10	--	Wisconsin	Michigan	270	70	50	20
Michigan	Michigan	110	40	20	--	Michigan	Michigan	90	30	20	10
Jack pine	Michigan	680	230	100	20	Elm	Michigan	300	80	50	30
Minnesota	Michigan	290	100	40	10	Minnesota	Michigan	--	--	--	--
Wisconsin	Michigan	140	40	20	--	Wisconsin	Michigan	--	--	--	--
Michigan	Michigan	250	90	40	10	Michigan	Michigan	300	80	50	30
Spruce	Michigan	170	60	30	--	Beech	Michigan	2,700	690	450	240
Minnesota	Michigan	70	20	10	--	Minnesota	Michigan	--	--	--	--
Wisconsin	Michigan	40	20	10	--	Wisconsin	Michigan	--	--	--	--
Michigan	Michigan	60	20	10	--	Michigan	Michigan	2,700	690	450	240
Balsam	Michigan	440	170	80	20	Oak	Michigan	440	100	70	30
Minnesota	Michigan	180	70	30	10	Minnesota	Michigan	50	10	10	--
Wisconsin	Michigan	40	20	10	--	Wisconsin	Michigan	90	10	10	--
Michigan	Michigan	220	80	40	10	Michigan	Michigan	300	80	50	30
Tamarack	Michigan	170	60	30	--	Aspen	Michigan	6,150	1,570	1,030	540
Minnesota	Michigan	70	20	10	--	Minnesota	Michigan	3,900	990	650	340
Wisconsin	Michigan	40	20	10	--	Wisconsin	Michigan	1,530	400	260	140
Michigan	Michigan	60	20	10	--	Michigan	Michigan	720	180	120	60
Cedar	Michigan	2,230	760	310	80	Cottonwood	Michigan	--	--	--	--
Minnesota	Michigan	2,290	100	40	10	Minnesota	Michigan	--	--	--	--
Wisconsin	Michigan	500	170	70	20	Wisconsin	Michigan	--	--	--	--
Michigan	Michigan	1,440	490	200	50	Michigan	Michigan	--	--	--	--
Hemlock	Michigan	140	40	20	--	Miscellaneous	Michigan	370	100	70	30
Minnesota	Michigan	--	--	--	--	Minnesota	Michigan	--	--	--	--
Wisconsin	Michigan	70	20	10	--	Wisconsin	Michigan	90	30	20	10
Michigan	Michigan	70	20	10	--	Michigan	Michigan	280	70	50	20
Softwood total	Michigan	4,690	1,630	700	150	Hardwood total	Michigan	14,410	3,670	2,420	1,250
Minnesota	Michigan	1,220	420	180	40	Minnesota	Michigan	5,030	1,270	840	430
Wisconsin	Michigan	1,080	380	170	30	Wisconsin	Michigan	2,480	630	420	210
Michigan	Michigan	2,390	830	350	80	Michigan	Michigan	6,900	1,770	1,160	610
Maple	Michigan	2,820	720	250	--	All species	Michigan	19,100	5,300	3,200	1,950
Minnesota	Michigan	--	--	--	--	Minnesota	Michigan	6,250	1,690	1,040	610
Wisconsin	Michigan	360	90	30	--	Wisconsin	Michigan	3,360	1,010	800	380
Michigan	Michigan	2,460	630	220	--	Michigan	Michigan	3,290	2,600	1,560	960

Table 14.--Total net timber drain resulting from cutting in the Lake States - 1950

Species and state		Net timber drain by size classes				Species and state		Net timber drain by size classes				
		Total		:Saw tbr.:Pole tbr.: Tops				Total		:Saw tbr.:Pole tbr.: Tops		
		M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.			M bd.ft.	M cu.ft.	M cu.ft.	M cu.ft.	
White pine		65,110	16,060	10,540	2,660	2,860		Birch	84,060	22,000	13,970	8,030
Minnesota		13,450	3,255	2,175	490	590		Minnesota	5,300	2,370	1,000	1,370
Wisconsin		32,130	7,990	5,200	1,380	1,410		Wisconsin	18,520	5,980	3,130	2,850
Michigan		19,530	4,815	3,165	1,790	860		Michigan	60,240	13,650	9,840	3,810
Red pine		56,680	14,485	9,115	2,890	2,480		Basswood	51,110	12,300	8,190	4,110
Minnesota		24,730	6,415	3,980	1,350	1,085		Minnesota	13,740	3,710	2,270	1,440
Wisconsin		23,620	5,975	3,795	1,140	1,040		Wisconsin	20,220	4,720	3,200	1,520
Michigan		8,330	2,095	1,340	400	355		Michigan	17,150	3,870	2,720	1,150
Jack pine		68,840	47,310	11,195	33,185	2,930		Elm	74,270	21,145	12,365	8,780
Minnesota		47,740	28,970	7,750	19,190	2,030		Minnesota	15,350	4,860	2,640	2,220
Wisconsin		10,040	10,070	1,665	7,975	430		Wisconsin	27,520	7,065	4,465	2,600
Michigan		11,060	8,270	1,780	6,020	470		Michigan	31,400	9,220	5,260	3,960
Spruce		22,815	28,670	3,690	24,020	960		Beech	27,730	6,260	4,520	1,740
Minnesota		11,690	16,310	1,890	13,950	490		Minnesota	--	--	--	--
Wisconsin		2,370	2,900	390	2,400	110		Wisconsin	1,000	280	170	110
Michigan		8,755	9,460	1,410	7,690	360		Michigan	26,730	5,980	4,350	1,630
Balsam		18,930	27,730	3,080	23,860	790		Oak	127,780	49,370	22,500	26,370
Minnesota		8,690	11,440	1,430	9,640	370		Minnesota	18,430	8,480	3,410	5,070
Wisconsin		3,510	5,800	570	5,080	150		Wisconsin	72,950	26,070	12,610	13,460
Michigan		6,730	10,490	1,080	9,140	270		Michigan	36,400	14,820	6,480	8,340
Tamarack		12,865	5,780	2,250	3,010	520		Aspen	112,890	116,670	19,630	97,040
Minnesota		7,275	3,530	1,300	1,920	310		Minnesota	43,880	41,780	7,740	34,040
Wisconsin		2,230	1,100	400	600	100		Wisconsin	39,380	38,350	6,670	31,680
Michigan		3,360	1,150	550	490	110		Michigan	29,630	36,540	5,220	31,320
Cedar		24,705	11,820	4,430	6,260	1,130		Ash	11,875	3,490	2,010	1,480
Minnesota		5,035	2,500	950	1,310	240		Minnesota	6,510	1,580	1,050	1,530
Wisconsin		4,070	2,090	740	1,150	200		Wisconsin	2,585	930	430	500
Michigan		15,600	7,230	2,740	3,800	690		Michigan	2,980	980	530	450
Hemlock		228,300	52,790	36,780	6,230	9,780		Miscellaneous	28,120	9,080	4,790	4,290
Minnesota		--	--	--	--	--		Minnesota	6,460	3,060	1,230	1,830
Wisconsin		75,130	18,020	12,160	2,620	3,240		Wisconsin	10,080	2,910	1,670	1,240
Michigan		153,170	34,770	24,620	3,610	6,540		Michigan	11,580	3,110	1,890	1,220
Softwood total		498,245	204,645	81,080	102,115	21,450		Hardwood total	745,655	294,260	124,950	169,310
Minnesota		118,610	72,420	19,475	47,830	5,115		Minnesota	112,920	66,700	19,870	46,850
Wisconsin		153,100	53,945	24,920	22,345	6,680		Wisconsin	250,425	100,990	41,820	59,170
Michigan		226,535	78,280	36,685	31,940	9,655		Michigan	382,310	126,570	63,260	63,310
Maple		227,820	53,945	36,975	16,970	--		All species	1,243,900	498,905	206,030	271,425
Minnesota		3,250	860	530	330	--		Minnesota	231,530	139,120	39,345	94,660
Wisconsin		58,370	14,685	9,475	5,210	--		Wisconsin	403,525	154,935	66,740	81,515
Michigan		166,200	38,400	26,970	11,430	--		Michigan	608,845	204,850	99,945	95,250

FOREST PRODUCTS HARVESTED

IN THE LAKE STATES

1950

Table 15.--Sawlog and saw-bolt production in the Lake States - 1950

Species: Volume cut and destination and : origin : Total : Minn. : Wis. : Mich.:					Species: Volume cut and destination and : origin : Total : Minn. : Wis. : Mich.:				
M bd.ft., Int'l. 1/4-inch					M bd.ft., Int'l. 1/4-inch				
W. pine	67,326	13,999	33,582	19,745	Elm	57,067	12,029	21,524	23,514
Minn.	13,999	13,999	--	--	Minn.	12,129	12,029	100	--
Wis.	33,002	--	33,002	--	Wis.	20,644	--	20,644	--
Mich.	20,325	--	580	19,745	Mich.	24,294	--	780	23,514
Red pine	62,843	27,065	26,728	9,050	Beech	18,582	--	956	17,626
Minn.	27,065	27,065	--	--	Minn.	--	--	--	--
Wis.	26,598	--	26,598	--	Wis.	756	--	756	--
Mich.	9,180	--	130	9,050	Mich.	17,826	--	200	17,626
Jackpine	72,829	52,264	8,224	12,341	Oak	95,073	10,753	58,383	25,937
Minn.	52,264	52,264	--	--	Minn.	11,053	10,753	300	--
Wis.	8,104	--	8,104	--	Wis.	57,793	--	57,793	--
Mich.	12,461	--	120	12,341	Mich.	26,227	--	290	25,937
Spruce	13,595	5,575	1,617	6,403	Aspen	145,385	52,668	60,202	32,515
Minn.	5,575	5,575	--	--	Minn.	51,668	51,668	--	--
Wis.	1,527	--	1,527	--	Wis.	61,262	1,000	59,162	1,100
Mich.	6,493	--	90	6,403	Mich.	32,455	--	1,040	31,415
Balsam	7,741	4,252	990	2,499	Ctnwd.	10,819	6,510	1,862	2,447
Minn.	4,252	4,252	--	--	Minn.	6,510	6,510	--	--
Wis.	970	--	970	--	Wis.	1,862	--	1,862	--
Mich.	2,519	--	20	2,499	Mich.	2,447	--	--	2,447
Tamarack	4,166	2,469	1,342	355	Ash	17,272	3,339	7,880	6,053
Minn.	2,469	2,469	--	--	Minn.	3,339	3,339	--	--
Wis.	1,342	--	1,342	--	Wis.	7,645	--	7,620	25
Mich.	355	--	--	355	Mich.	6,288	--	260	6,028
Cedar	9,960	1,120	2,322	6,518	Hickory	673	--	114	559
Minn.	1,120	1,120	--	--	Minn.	--	--	--	--
Wis.	2,262	--	2,262	--	Wis.	114	--	114	--
Mich.	6,578	--	60	6,518	Mich.	559	--	--	559
Hemlock	185,835	--	63,930	121,905	Cherry	854	16	65	773
Minn.	--	--	--	--	Minn.	16	16	--	--
Wis.	59,600	--	59,300	300	Wis.	65	--	65	--
Mich.	126,235	--	4,630	121,605	Mich.	773	--	--	773
Softwd.					Walnut	249	18	24	207
total	424,295	106,744	138,735	178,816	Minn.	18	18	--	--
Minn.	106,744	106,744	--	--	Wis.	24	--	24	--
Wis.	133,405	--	133,105	300	Mich.	207	--	--	207
Mich.	184,146	--	5,630	178,516	Misc.	3,255	219	1,149	1,887
Maple	192,423	1,744	60,802	129,877	Minn.	219	219	--	--
Minn.	2,144	1,744	400	--	Wis.	1,149	--	1,149	--
Wis.	49,752	--	49,502	250	Mich.	1,887	--	--	1,887
Mich.	140,527	--	10,900	129,627	Hardwd.				
Birch	58,404	2,472	17,652	38,280	total	640,715	98,431	248,635	293,649
Minn.	2,472	2,472	--	--	Minn.	98,931	97,431	1,500	--
Wis.	11,452	--	11,452	--	Wis.	229,165	1,000	226,765	1,400
Mich.	44,480	--	6,200	38,280	Mich.	312,619	--	20,370	292,249
Basswood	40,659	8,663	18,022	13,974	All				
Minn.	9,363	8,663	700	--	species	1,065,010	205,175	387,370	472,465
Wis.	16,647	--	16,622	25	Minn.	205,675	204,175	1,500	--
Mich.	14,649	--	700	13,949	Wis.	362,570	1,000	359,870	1,700
					Mich.	496,765	--	26,000	470,765

Table 16.--Production of logs and bolts for veneer industry in the Lake States
1950

Species and origin	Volume cut and destination					Heading stock	Imports	
	Total	Minn.	Wis.	Mich.	Other U. S.		Other U. S.	Foreign Canada
	M bd.ft., Int'l. 1/4-inch rule					Standard cords	M bd.ft. Int'l 1/4-inch	
White pine	2,134	28	411	1,695	--	--	--	21
Minnesota	28	28	--	--	--	--	--	--
Wisconsin	379	--	379	--	--	--	--	7
Michigan	1,727	--	32	1,695	--	--	--	14
Maple	31,312	37	17,656	13,603	16	1,847	147	1,661
Minnesota	581	37	544	--	--	--	--	--
Wisconsin	8,677	--	8,653	24	--	1,347	106	621
Michigan	22,054	--	8,459	13,579	16	500	41	1,040
Birch	17,523	53	10,888	6,582	--	80	6	11,740
Minnesota	133	53	58	22	--	--	--	--
Wisconsin	3,931	--	3,878	53	--	80	--	9,918
Michigan	13,459	--	6,952	6,507	--	--	6	1,822
Basswood	11,093	631	8,897	1,565	--	4,134	372	68
Minnesota	3,269	631	2,605	33	--	351	--	--
Wisconsin	4,327	--	4,293	34	--	2,904	344	34
Michigan	3,497	--	1,999	1,498	--	879	28	34
Elm	11,978	198	8,307	3,434	39	2,039	325	262
Minnesota	1,376	198	1,178	--	--	--	--	--
Wisconsin	6,143	--	6,103	40	--	1,539	268	27
Michigan	4,459	--	1,026	3,394	39	500	57	235
Beech	6,160	--	777	5,383	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	182	--	182	--	--	--	--	--
Michigan	5,978	--	595	5,383	--	--	--	--
Oak	3,564	--	2,727	717	120	50	334	326
Minnesota	336	--	321	15	--	--	--	--
Wisconsin	2,351	--	2,080	271	--	50	198	196
Michigan	877	--	326	431	120	--	136	130
Aspen	239	190	49	--	--	8,231	--	8
Minnesota	190	190	--	--	--	814	--	--
Wisconsin	48	--	48	--	--	7,417	--	--
Michigan	1	--	1	--	--	--	--	8
Ash	1,168	18	997	148	5	--	3	2
Minnesota	44	18	23	3	--	--	--	--
Wisconsin	451	--	447	4	--	--	3	2
Michigan	673	--	527	141	5	--	--	--
Walnut	391	--	5	--	386	--	--	--
Minnesota	44	--	--	--	44	--	--	--
Wisconsin	5	--	5	--	--	--	--	--
Michigan	342	--	--	--	342	--	--	--
Other 2/	1,025	176	320	525	4	89	247	172
Minnesota	366	176	190	--	--	18	--	--
Wisconsin	158	--	130	28	--	71	5	172
Michigan	501	--	--	497	4	--	242	--
All species	86,587	1,331	51,034	33,652	570	16,470	1,434	14,260
Minnesota	6,367	1,331	4,919	73	44	1,183	--	--
Wisconsin	26,652	--	26,198	454	--	13,408	924	10,977
Michigan	53,568	--	19,917	33,125	526	1,879	510	3,283

1/ Hemlock

2/ Cottonwood, sycamore, and yellow poplar.

Table 17.--Pulpwood production and imports in the Lake States - 1950

Species and origin	Volume cut and destination					Imports	
	Total	Minn.	Wis.	Mich.	Other U.S.	Other U.S.	Foreign Canada
Thousand standard cords, rough wood basis							
Pine	346	124	166	56	---	49	92
Minnesota	187	124	60	3	---	---	54
Wisconsin	93	---	93	---	---	49	28
Michigan	66	---	13	53	---	---	10
Spruce	316	84	202	30	---	13	322
Minnesota	186	84	102	---	---	---	25
Wisconsin	31	---	31	---	---	13	226
Michigan	99	---	69	30	---	---	71
Balsam	318	41	235	42	---	---	21
Minnesota	126	41	85	---	---	---	---
Wisconsin	69	---	69	---	---	---	3
Michigan	123	---	81	42	---	---	18
Tamarack	1	1	---	---	---	3	---
Minnesota	1	1	---	---	---	---	---
Wisconsin	---	---	---	---	---	3	---
Michigan	---	---	---	---	---	---	---
Hemlock	131	---	91	40	---	---	---
Minnesota	---	---	---	---	---	---	---
Wisconsin	47	---	47	---	---	---	---
Michigan	84	---	44	40	---	---	---
Sfwd. total	1,112	250	694	168	---	65	435
Minnesota	500	250	247	3	---	---	79
Wisconsin	240	---	240	---	---	65	257
Michigan	372	---	207	165	---	---	99
Birch	11	---	10	1	---	---	---
Minnesota	---	---	---	---	---	---	---
Wisconsin	6	---	6	---	---	---	---
Michigan	5	---	4	1	---	---	---
Aspen	694	235	387	65	7	---	55
Minnesota	248	226	22	---	---	---	32
Wisconsin	195	9	186	---	---	---	1
Michigan	251	---	179	65	7	---	22
Misc. hwd's.	49	1	21	27	---	---	---
Minnesota	1	1	---	---	---	---	---
Wisconsin	20	---	20	---	---	---	---
Michigan	28	---	1	27	---	---	---
Hwd. total	754	236	418	93	7	---	55
Minnesota	249	227	22	---	---	---	32
Wisconsin	221	9	212	---	---	---	1
Michigan	284	---	184	93	7	---	22
Slabs, etc.	7	---	7	---	---	---	---
Minnesota	---	---	---	---	---	---	---
Wisconsin	7	---	7	---	---	---	---
Michigan	---	---	---	---	---	---	---
All species	1,873	486	1,119	261	7	65	490
Minnesota	749	477	269	3	---	---	111
Wisconsin	468	9	459	---	---	65	258
Michigan	656	---	391	258	7	---	121

Table 18.—Production fuel wood, chemical wood, excelsior bolts
in the Lake States - 1950

Species and origin	Volume cut <u>1/</u>			Species and origin	Volume cut <u>1/</u>		
	Fuel wood	Chemical wood	Excelsior		Fuel wood	Chemical wood	Excelsior
	M standard cords				M standard cords		
White pine	120	---	---	Birch	240	25	---
Minnesota	15	---	---	Minnesota	70	---	---
Wisconsin	70	---	---	Wisconsin	90	1	---
Michigan	35	---	---	Michigan	80	24	---
Red pine	25	---	---	Basswood	110	---	4
Minnesota	10	---	---	Minnesota	60	---	---
Wisconsin	10	---	---	Wisconsin	25	---	3
Michigan	5	---	---	Michigan	25	---	1
Jack pine	115	---	---	Elm	320	1	---
Minnesota	50	---	---	Minnesota	100	---	---
Wisconsin	60	---	---	Wisconsin	75	---	---
Michigan	5	---	---	Michigan	145	1	---
Spruce	35	---	---	Beech	40	8	---
Minnesota	20	---	---	Minnesota	---	---	---
Wisconsin	5	---	---	Wisconsin	5	---	---
Michigan	10	---	---	Michigan	35	8	---
Balsam	35	---	---	Oak	860	1	---
Minnesota	25	---	---	Minnesota	175	---	---
Wisconsin	5	---	---	Wisconsin	415	---	---
Michigan	5	---	---	Michigan	270	1	---
Tamarack	205	---	---	Aspen	655	---	60
Minnesota	155	---	---	Minnesota	295	---	(2/)
Wisconsin	40	---	---	Wisconsin	160	---	27
Michigan	10	---	---	Michigan	200	---	33
Cedar	40	---	---	Ash	60	2	---
Minnesota	10	---	---	Minnesota	15	---	---
Wisconsin	25	---	---	Wisconsin	25	---	---
Michigan	5	---	---	Michigan	20	2	---
Hemlock	215	---	---	Miscellaneous	155	(2/)	---
Minnesota	---	---	---	Minnesota	90	---	---
Wisconsin	145	---	---	Wisconsin	35	---	---
Michigan	70	---	---	Michigan	30	(2/)	---
Sfwd. total	790	---	---	Hdwd. total	2,860	84	64
Minnesota	285	---	---	Minnesota	815	---	(2/)
Wisconsin	360	---	---	Wisconsin	990	3	30
Michigan	145	---	---	Michigan	1,055	81	34
Maple	420	47	---	All species	3,650	84	64
Minnesota	10	---	---	Minnesota	1,100	---	(2/)
Wisconsin	160	2	---	Wisconsin	1,350	3	30
Michigan	250	45	---	Michigan	1,200	81	34

1/ Excludes slabwood, veneer cores, etc.

2/ Less than 1 M cords.

Table 19.--Production of miscellaneous piece products
in the Lake States - 1950

Species : and origin :	Piling :	Poles :	Posts :	Hewn ties :	Species : and origin :	Piling :	Poles :	Posts :	Hewn ties :
Thousand pieces					Thousand pieces				
White pine	---	---	---	---	Maple	.2	---	300	---
Minnesota	---	---	---	---	Minnesota	---	---	100	---
Wisconsin	---	---	---	---	Wisconsin	.2	---	100	---
Michigan	---	---	---	---	Michigan	---	---	100	---
Red pine	1.8	---	500	---	Birch	---	---	250	---
Minnesota	1.0	---	400	---	Minnesota	---	---	50	---
Wisconsin	.2	---	100	---	Wisconsin	---	---	100	---
Michigan	.6	---	---	---	Michigan	---	---	100	---
Jack pine	1.0	16	950	---	Elm	3.0	---	450	---
Minnesota	1.0	15	700	---	Minnesota	---	---	50	---
Wisconsin	---	1	150	---	Wisconsin	3.0	---	200	---
Michigan	---	---	100	---	Michigan	---	---	200	---
Spruce	.1	---	---	1	Oak	1.0	---	13,400	---
Minnesota	---	---	---	---	Minnesota	---	---	3,000	---
Wisconsin	---	---	---	---	Wisconsin	1.0	---	7,100	---
Michigan	.1	---	---	1	Michigan	---	---	3,300	---
Balsam	---	---	100	---	Aspen	---	---	1,400	---
Minnesota	---	---	100	---	Minnesota	---	---	700	---
Wisconsin	---	---	---	---	Wisconsin	---	---	400	---
Michigan	---	---	---	---	Michigan	---	---	300	---
Tamarack	---	---	700	1	Ash	.1	---	---	---
Minnesota	---	---	300	1	Minnesota	---	---	---	---
Wisconsin	---	---	250	---	Wisconsin	.1	---	---	---
Michigan	---	---	150	---	Michigan	---	---	---	---
Cedar	---	104	7,200	15	Miscellaneous	.1	---	600	---
Minnesota	---	55	1,500	1	Minnesota	---	---	100	---
Wisconsin	---	9	1,200	---	Wisconsin	.1	---	300	---
Michigan	---	40	4,500	14	Michigan	---	---	200	---
Hemlock	---	---	150	2	Hdwd. total	4.4	---	16,400	---
Minnesota	---	---	---	---	Minnesota	---	---	4,000	---
Wisconsin	---	---	100	---	Wisconsin	4.4	---	8,200	---
Michigan	---	---	50	2	Michigan	---	---	4,200	---
Sftwd. total	2.9	120	9,600	19	All species	7.3	120	26,000	19
Minnesota	2.0	70	3,000	2	Minnesota	2.0	70	7,000	2
Wisconsin	.2	10	1,800	---	Wisconsin	4.6	10	10,000	---
Michigan	.7	40	4,800	17	Michigan	.7	40	9,000	17

Table 20.--Production of mine timbers and other mine products
in the Lake States - 1950

Species and origin	Total	Mine timbers	Mine lagging	Other 1/	Species and origin	Total	Mine timbers	Mine lagging	Other 1/
Thousand cubic feet					Thousand cubic feet				
White pine	20	15	--	5	Maple	1,490	1,130	--	360
Minnesota	15	15	--	--	Minnesota	25	25	--	--
Wisconsin	--	--	--	--	Wisconsin	75	55	--	20
Michigan	5	--	--	5	Michigan	1,390	1,050	--	340
Red pine	75	70	--	5	Birch	460	390	--	70
Minnesota	75	70	--	5	Minnesota	5	5	--	--
Wisconsin	--	--	--	--	Wisconsin	45	30	--	15
Michigan	--	--	--	--	Michigan	410	355	--	55
Jack pine	1,090	790	170	130	Elm	115	105	--	10
Minnesota	1,090	790	170	130	Minnesota	35	35	--	--
Wisconsin	--	--	--	--	Wisconsin	10	10	--	--
Michigan	--	--	--	--	Michigan	70	60	--	10
Spruce	5	--	--	5	Beech	85	80	--	5
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	5	--	--	5	Michigan	85	80	--	5
Tamarack	2,070	360	230	1,480	Oak	15	15	--	--
Minnesota	1,005	305	--	700	Minnesota	--	--	--	--
Wisconsin	145	10	5	130	Wisconsin	5	5	--	--
Michigan	920	45	225	650	Michigan	10	10	--	--
Cedar	1,785	--	1,770	15	Ash	65	65	--	--
Minnesota	310	--	310	--	Minnesota	65	65	--	--
Wisconsin	90	--	90	--	Wisconsin	--	--	--	--
Michigan	1,385	--	1,370	15	Michigan	--	--	--	--
Hemlock	340	305	5	30	Hdwd. total	2,230	1,785	--	445
Minnesota	--	--	--	--	Minnesota	130	130	--	--
Wisconsin	10	5	--	5	Wisconsin	135	100	--	35
Michigan	330	300	5	25	Michigan	1,965	1,555	--	410
Sftwd. total	5,385	1,540	2,175	1,670	All species	7,615	3,325	2,175	2,115
Minnesota	2,495	1,180	480	835	Minnesota	2,625	1,310	480	835
Wisconsin	245	15	95	135	Wisconsin	380	115	95	170
Michigan	2,645	345	1,600	700	Michigan	4,610	1,900	1,600	1,110

1/ Cribbing, poles, trestle logs, hewed shaft timbers, smelter brands, etc.

Table 21.--Production of cooperage logs and bolts in the Lake States - 1950

Species	Total	Volume cut by states		
		Minnesota	Wisconsin	Michigan
<u>M bd.ft. Int'l 1/4-inch rule</u>				
Maple	284	284	--	--
Basswood	136	89	47	--
Elm	219	219	--	--
Oak	1,622	385	1,237	--
Aspen	78	78	--	--
Cottonwood	207	207	--	--
Ash	--	--	--	--
All species	2,546	1,262	1,284	--

Table 22.--Production of miscellaneous products^{1/} in the Lake States - 1950

Species	Total	Volume cut by states		
		Minnesota	Wisconsin	Michigan
Thousand cubic feet				
White pine	150	50	50	50
Red pine	90	40	20	30
Jack pine	190	80	40	70
Spruce	50	20	10	20
Balsam	130	50	20	60
Tamarack	50	20	10	20
Cedar	620	80	140	400
Hemlock	40	--	20	20
Softwood total	1,320	340	310	670
Maple	630	--	80	550
Birch	210	170	30	10
Basswood	150	70	60	20
Elm	70	--	--	70
Beech	600	--	--	600
Oak	90	10	10	70
Aspen	1,360	860	340	160
Ash	10	--	--	10
Other	70	--	20	50
Hardwood total	3,190	1,110	540	1,540
ALL SPECIES	4,510	1,450	850	2,210

^{1/} Rough forest products used for manufacture of matches, clothespins, bowling pins, handles, woodenware, rustic furniture and fences, toys, shingles, lath, log cabin material, etc.